DIGITAL TERRAIN MODELLING AND PROPAGULE DISPERSAL IN KENYAN MANGROVES WITH A ZONATED VEGETATION STRUCTURE (GAZI BAY)

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In February – March 2002 fieldwork was carried out in a classic zoned mangrove forest at Gazi Bay (Kenya) and included topographical measurements and a collection of the vegetation data in the work field, but also successive propagule counting along five line transects. The main objective of the present experimental study relates to the study of vegetation structure dynamics and contributes to an overall view on where propagules can establish from the moment they detach themselves from their parental tree. The latter particularly concerns the juvenile vegetation layer of the species *Rhizophora mucronata* and *Ceriops tagal*.

This part of the research framework gives the possibility to start working in a GIS environment and resolving several questions regarding the impact of degradation and sea level changes on the dispersal of propagules at the study area in question. The GIS-analyses take into account the available information derived from the fieldwork, but alternations that go hand in hand with degradation and/or sea level changes (*e.g.* changes in topography, erosion patterns, rates of sediment supply, golf action,…) are beyond the scope of this explorative study.

The main findings that result from these analyses are that the study area at present has the potential to successfully rejuvenate and renew, although increasing anthropogenic pressures could have severe consequences on the dispersal of the propagules within this mangrove stand through the loss of aerial roots masses which were shown to provide stranding areas to propagules. Also, the hypothetical scenario that represents a minimum sea level rise of 4.8 $mm.y^{-1}$ could alter the distribution pattern of the juvenile vegetation layer within a time span of 20 years, which could lead to notable floristic modifications from a regional point of view.